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NEW CENTRAL AMERICAN SNAKES IN THE AMERICAN MUSEUM OF NATURAL HISTORY¹

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Thanks to the kindness of Dr. G. K. Noble, I have recently been able to examine the collections of Central American snakes in the American Museum. I refer particularly to the old Cope collection from Costa Rica, the Mannhardt-Halter collection from Nicaragua, and the Rütthling collection from Mexico. These collections contain a good many interesting and a few new forms.

GEOPHIS

The small Central American ground snakes allied to *Geophis* are in a rather mixed condition. *Geophis sallæi* has the hemipenis single, the sulcus forked, and the distal half of the organ covered with fringed calyces. The proximal edge of the calyculate region is free and hence the organ is "capitate," the proximal one-fourth is smooth, and the remaining one-fourth has a few hooks. This type of hemipenis is practically that of *Carphophis*, which differs from *Geophis* and the related genera as follows:

	ANT. TEMP.	NASAL	ANAL
<i>Carphophis</i>	Present	1	2
<i>Geophis</i>	Absent	2	1
<i>Atractus</i>	Present	2	1
<i>Adelphicos</i>	Present	2	2

Atractus has a very different hemipenis from that of *Geophis*, as it is deeply furcate, and spinous, and noncalyculate, throughout.

Adelphicos has enormous geneials, a completely spinous hemipenis, and the sulcus is not forked as it is in the other three, which, if correct, means that it is not at all related.

The Central American forms which Boulenger places in *Atractus* seem much more closely allied to *Geophis*. They differ from it by having an anterior temporal. The hemipenis is practically that of *Geophis*. These are three Mexican species: *latifrontalis*, *longiceps*, and *isthmicus*. None of them were seen by Boulenger. A specimen of *longiceps*, collected

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by R  thling, Amer. Mus. No. 19733, no locality, has the hemipenis single, the sulcus forked, the distal third calyculate, the proximal one-sixth smooth and the remaining one-sixth with hooks. Its position is evidently much closer to *Geophis* than to *Atractus*, but I am loath to propose a new genus based solely on peneial characters, and the only other distinction between the two is the presence or absence of the anterior temporal.

The snakes referred by Boulenger to *Dirosema* (1894, Cat. Snakes Brit. Mus., (2) II, p. 294, type *Geophis bicolor* G  nther) belong, with one exception, to *Geophis*. The type differs only in the slightly greater distinctness of the head. These are:

1. *Geophis bicolor* G  nther, Mexico (= *Rhabdosoma guttulatum* Cope).
2. *Geophis omiltemanum* G  nther, Mexico (*omiltemanum* may belong with *longiceps* as the first temporal is present, the other two lack it).
3. *Colobognathus brachycephalum* Cope, Costa Rica (this specimen was not seen by Boulenger).
4. *Catostoma psephotum* Cope, Costa Rica. This snake was not seen by Boulenger, but the type, and three specimens from Navarro, Costa Rica, collected by me and now in the Museum of Comparative Zo  logy, demonstrate clearly that this snake is a *Ninia*, with the hypapophyses and hemipenis of that genus.

Dirosema collare Werner (1923, Zool. Anz., XXIII, p. 197, Mexico) is probably a *Chersodromus* as it has a single prefrontal.

Sonora michoacanensis (Cope)

A. M. N. H. Nos. 19714-6; Distrito Federal, Mexico; collected by P. D. R. R  thling.

Sonora seems to be the proper generic term for the back-fanged snakes allied to *Tantilla* but possessing a loreal. The synonymy of the genus is as follows:

Sonora BAIRD AND GIRARD, 1853, Cat. N. Amer. Rept., pt. 1, p. 117 (type, *S. semiannulata* Baird and Girard).

Chionactis COPE, 1860, Proc. Acad. Nat. Sci. Philadelphia, p. 241 (type, *Lamprosoma occipitale* Hallowell).

Scolecophis COPE, 1860, *op. cit.*, p. 259 (type, *Calamaria atrocincta* Schlegel).

Tantilla bocourti (G  nther)

A. M. N. H. No. 19735; Distrito Federal, Mexico; collected by P. D. R. R  thling.

I assign this specimen to *bocourti* rather than to the allied *Tantilla deviatrix* Barbour. *Bocourti* was based on two examples from Guana-juato, with ventrals 172-176, and caudals 55; this specimen from the

Federal District has 195 ventrals and 57 caudals; *deviatrix* from San Luis Potosi has 154 ventrals and 63 caudals. The coloration of all is alike. *Bocourti*, however, has the eye half as long as the snout (one-third in *deviatrix*); internasals more than half as long as prefrontals (less than half in *deviatrix*). These four specimens perhaps represent one species, yet as three of them agree in the head characters, and as the fourth differs in head characters, it is more conservative to let both species stand.

***Tantilla striata*, new species**

TYPE.—A. M. N. H. No. 19745; male; Mixtequillo, Oaxaca, Mexico; collected by P. D. R. Rùthling.

Scales 15; ventrals 165; anal divided; caudals 42; rostral as deep as broad, visible from above; internasals broader than long, half as long as prefrontals which are also broader than long; frontal hexagonal, very obtuse-angled in front and acutely angled behind; shorter than parietals, about twice as wide as supraocular; longer than its distance from tip of snout; parietals longer than their distance from tip of snout; eye more than half as long as its distance from tip of snout; nostril nearer internasal than to first labial; postnasal in contact with preocular; oculars 1-2; temporals 1-1; labials $\frac{7}{8}$, third and fourth entering eye, four lower labials in contact with the anterior chin shields which are longer than the posterior; anterior chin shields in contact with symphysial; brown; adjacent halves of rows 3 and 4 white; row 8 and adjacent halves of row 7 white; belly white, with brown spots anteriorly; head brown, two white flecks at tips of parietals; point of meeting of rostral, internasals, and prefrontals white; juncture of upper labials 1 and 2 white; upper labial 5 white; lower labials brown.

This snake is apparently distinct from its allies *reticulata* (*virgata*) and *miniata*. The first, from Panama, Costa Rica, and Nicaragua, has about the same coloration of three light stripes, but a much higher caudal count (57-67), and the head markings do not agree with the present specimen. The second, from Mexico, is nearer in scale count (V. 147-152, C. 55), but the coloration is quite different, there being five dark stripes.

The hemipenis of this snake is not forked nor is the sulcus divided; the distal third is occupied by calyces, the median third by many small hooks, and the proximal third is smooth with a large basal hook and one smaller one.

***Tantilla calamarina* Cope**

A. M. N. H. Nos. 19750, south of Santa Fe, Distrito Federal; 19743, near El Ocotillo, Nayarit; 12775, four miles north of Colima, Colima; 12776, Tecoman, Colima; 19746, five miles east of Tecoman, Colima; 19744, no locality.

This snake has a somewhat different hemipenis from that of *Tantilla striata*. Calyces occupy the distal two-fifths, the proximal fifth is smooth, and the two-fifths in between is occupied by a few large hooks of varying size, numbering about eight.

***Tantilla depressa*, new species**

A. M. N. H. No. 19747; female; Mixtequillo, Oaxaca, Mexico; collected by P. D. R. Ruthling.

Scales 15; ventrals 113; anal divided; caudals 14 plus. Rostral much flattened, portion visible from above equals its distance from frontal; internasals and prefrontals wider than long; frontal hexagonal, obtuse-angled in front, right-angled behind, more than twice as wide as supraocular, longer than its distance from tip of snout, shorter than parietals, which are shorter than their distance from tip of snout and longer than their distance from the rostral; postnasal touching preocular on right, not touching it on left; eye one-fourth its distance from tip of snout; oculars 1-1 temporals one on each side; labials $\frac{5}{6}$, the third entering the eye, the fourth in contact with the parietal; three lower labials in contact with the single pair of chin shields which are in contact with the symphysial. Yellow, a dark line on every scale row, except the second, which is marked by a dot on each scale, and the first, which is unmarked; the three middle and the three outer of these eleven lines fuse and form a dorsal and two lateral head stripes.

This very distinct form is allied only to *calamarina*. The extremely flattened head is unique in the genus, and is an example of the tendency seen in the larger *Ogmis* and *Stenorhina*.